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Jinjia Li (jli32@syr.edu), Syracuse University, Syracuse, NY 13244-1150, and **Claudia Miller*** (cmille06@syr.edu), Syracuse University, Syracuse, 13244-1150. *On the nonrigidity of Frobenius.*

We give an example of a ring in positive characteristic such that the Frobenius endomorphism is not rigid. The ring is in fact Gorenstein. This is in stark contrast to the situation for complete intersection rings, where rigidity is known to hold. In the process, we also investigate how the questions on rigidity of the Frobenius endomorphism are related to the behavior of the depth of $F^n(M)$ for a module M of infinite projective dimension. (Received September 19, 2007)